

CLAIMS

1. A process for coating a perforated substrate with a gel without substantial occlusion of the perforations, which process comprises:

- (i) forming a layer of a liquid pregel mixture, comprising one or more monomers, on a web coated with a coating having a surface energy less than the surface energy of the liquid pregel mixture;
- (ii) contacting the perforated substrate with the liquid pregel mixture; and
- (iii) curing the liquid pregel mixture.

2. A process according to claim 1, wherein the layer of the liquid pregel mixture is formed by extrusion of the liquid pregel mixture onto the web.

3. A process according to claim 1, wherein the contacting of the perforated substrate with the liquid pregel mixture is achieved by applying the substrate to the pregel mixture on the web.

4. A process according to claim 3, wherein the weight of liquid pregel mixture on the web is between about 0.01 to about 3 kg/m².

5. A process according to claim 1, wherein at least some of the curing takes place while the liquid pregel mixture is in contact with both the perforated substrate and the web.

6. A process according to claim 1, wherein at least some of the curing takes place while the liquid pregel mixture is in contact with the perforated substrate after removal of the web.

7. A process according to claim 1, wherein the web comprises paper, polyester, polyolefin or any combination thereof.

8. A process according to claim 1, wherein the coating of the web comprises silicone, polyethylene, polyvinyl fluoride, PTFE or any mixture or combination thereof.

9. A process according to claim 1, wherein the perforated substrate is planar, having first and second major faces, and the process applies the gel to at least a portion of at least one major face of the substrate.

10. A process according to claim 9, wherein the planar perforated substrate comprises woven or non-woven fibers of cotton, rayon, polyester, polyamide, polypropylene, wool or any mixture or combination thereof.

11. A process according to claim 1, wherein the one or more monomers comprise at least one acrylate based monomer.

12. A process according to claim 1, wherein the liquid pregel mixture includes one or more crosslinking agents for the monomer(s).

13. A process according to claim 1, wherein the liquid pregel mixture is an aqueous mixture, optionally including also at least one plasticising agent other than water.

14. A process according to claim 13, wherein the liquid pregel mixture includes from about 3% to about 40% by weight of water.

15. A process according to claim 1, wherein the curing is performed by heat, ultra-violet irradiation, electron beam irradiation or any combination thereof.

16. A gel-coated, perforated substrate obtained by a process according to claim 1.

17. A gel-coated, perforated substrate, wherein the substrate is coated with a cured gel formed by polymerization of one of more monomers, of one or more monomers, optionally in the presence of one or more crosslinking agents for the monomer(s), the perforations of the substrate being substantially unoccluded by the gel and the coated substrate being obtainable by a process according to claim 1.

18. A gel-coated, perforated substrate according to claim 16, wherein only one side of the substrate is coated by the gel.

19. A gel-coated, perforated substrate according to claim 18, wherein the gel coat is protected by a contacting release sheet.

20. An article comprising a gel-coated, perforated substrate according to claim 19, the article being an attachment tab for a wig or toupee, a wound dressing, a patch for transdermal drug delivery, a therapeutic patch or a biomedical skin electrode.

21. A gel-coated, perforated substrate according to claim 17, wherein only one side of the substrate is coated by the gel.

22. A gel-coated, perforated substrate according to claim 21, wherein the gel coat is protected by a contacting release sheet.

23. An article comprising a gel-coated, perforated substrate according to claim 22, the article being an attachment tab for a wig or toupee, a wound dressing, a patch for transdermal drug delivery, a therapeutic patch or a biomedical skin electrode.

24. A process according to claim 2, wherein the contacting of the perforated substrate with the liquid pregel mixture is achieved by applying the substrate to the pregel mixture on the web.

25. A process according to claim 24, wherein the weight of liquid pregel mixture on the web is between about 0.01 to about 3 kg/m².

26. A process according to claim 25, wherein at least some of the curing takes place while the liquid pregel mixture is in contact with both the perforated substrate and the web.

27. A process according to claim 26, wherein at least some of the curing takes place while the liquid pregel mixture is in contact with the perforated substrate after removal of the web.

28. A process according to claim 27, wherein the web comprises paper, polyester, polyolefin or any combination thereof.

29. A process according to claim 28, wherein the coating of the web comprises silicone, polyethylene, polyvinyl fluoride, PTFE or any mixture or combination thereof.

30. A process according to claim 29, wherein the perforated substrate is planar, having first and second major faces, and the process applies the gel to at least a portion of at least one major face of the substrate.

31. A process according to claim 30, wherein the planar perforated substrate comprises woven or non-woven fibers of cotton, rayon, polyester, polyamide, polypropylene, wool or any mixture or combination thereof.

32. A process according to claim 31, wherein the one or more monomers comprise at least one acrylate based monomer.

33. A process according to claim 32, wherein the liquid pregel mixture includes one or more crosslinking agents for the monomer(s).

34. A process according to claim 33, wherein the liquid pregel mixture is an aqueous mixture, optionally including also at least one plasticising agent other than water.

35. A process according to claim 34, wherein the liquid pregel mixture includes from about 3% to about 40% by weight of water.

36. A process according to claim 35, wherein the curing is performed by heat, ultra-violet irradiation, electron beam irradiation or any combination thereof.

37. A gel-coated, perforated substrate obtained by a process according to claim 36.

38. A gel-coated, perforated substrate, wherein the substrate is coated with a cured gel formed by polymerization of one or more monomers, of one or more monomers, optionally in the presence of one or more crosslinking agents for the monomer(s), the perforations of the substrate being substantially unoccluded by the gel and the coated substrate being obtainable by a process according to claim 37.

39. A gel-coated, perforated substrate according to claim 38, wherein only one side of the substrate is coated by the gel.

40. A gel-coated, perforated substrate according to claim 39, wherein the gel coat is protected by a contacting release sheet.

41. An article comprising a gel-coated, perforated substrate according to claim 40, the article being an attachment tab for a wig or toupee, a wound dressing, a patch for transdermal drug delivery, a therapeutic patch or a biomedical skin electrode.